WHAT IS CLAIMED IS:

1. An insulating switching DC/DC converter, in which a DC voltage source is connected to a primary side of an insulating transformer, voltage is transformed by alternately turning on/off a first switching device and a second switching device so as not to simultaneously turn on the switching devices, the first and second switching devices being connected to the primary side, and an output of DC voltage is obtained via a secondary rectifier circuit of the insulating transformer, comprising:

an input choke coil,

an output choke coil, and

the insulating transformer, wherein

the insulating transformer has a center tap on a secondary side, the input choke coil, a primary coil of the insulating transformer, a secondary coil of the insulating transformer, and the output choke coil are wound around a common core, and the coils are arranged in directions of canceling DC fluxes generated by windings of the coils, and wherein

a primary circuit is formed on the primary side of the insulating transformer, the primary circuit being configured so that a series circuit of the input choke coil and the first switching device is connected across terminals of the DC voltage source, a series circuit of a first capacitor and the primary coil is connected across the terminals of the first switching device, and a series circuit of the second switching device and a second capacitor is connected across terminals of the first switching device, and

a secondary circuit is formed on the secondary side of the insulating transformer, the secondary circuit including a first rectifying device connected to a first secondary coil divided by the center tap in the secondary coil, a second rectifying device connected to a second secondary coil, the output choke coil fed with current having been rectified by the first and second rectifying devices, and an output smoothing capacitor connected to the output choke coil.

2. An insulating switching DC/DC converter, in which a DC voltage source is connected to a primary side of an insulating transformer, voltage is transformed by alternately turning on/off a first switching device and a second switching device so as not to simultaneously turn on the switching devices, the first and second switching devices

being connected to the primary side, and an output of DC voltage is obtained via a secondary rectifier circuit of the insulating transformer, comprising:

an input choke coil,

an output choke coil, and

the insulating transformer, wherein

the insulating transformer has a center tap on a secondary side, the input choke coil, a primary coil of the insulating transformer, a secondary coil of the insulating transformer, and the output choke coil are wound around a common core, and the coils are arranged in directions of canceling DC fluxes generated by windings of the coils, and wherein

a primary circuit is formed on the primary side of the insulating transformer, the primary circuit being configured so that a series circuit of the input choke coil and the first switching device is connected across terminals of the DC voltage source, a series circuit of a first capacitor and the primary coil is connected across terminals of the first switching device, and a series circuit of the second switching device and a second capacitor is connected in parallel with the input choke coil between a positive terminal of the DC voltage source and a negative source of the input choke coil, and

a secondary circuit is formed on the secondary side of the insulating transformer, the secondary circuit including a first rectifying device connected to a first secondary coil divided by the center tap in the secondary coil, a second rectifying device connected to a second secondary coil, the output choke coil fed with current having been rectified by the first and second rectifying devices, and an output smoothing capacitor connected to the output choke coil.

3. The insulating switching DC/DC converter according to claim 1, wherein the center tap is connected to a ground and the output choke coil is connected to the first rectifying device and the second rectifying device.

4. The insulating switching DC/DC converter according to claim 1, wherein the output choke coil is connected to the center tap.

5. An insulating switching DC/DC converter, in which a DC voltage source is connected to a primary side of an insulating transformer, voltage is transformed by alternately turning on/off a first switching device and a second switching device so as not to simultaneously turn on the switching devices, the first and second switching devices being connected to the primary side, and an output of DC voltage is obtained via a secondary rectifier circuit of the insulating transformer, comprising:

an input choke coil,

an output choke coil, and

the insulating transformer, wherein

the insulating transformer is a combined transformer having a first secondary coil and a second secondary coil on a secondary side, the input choke coil, a primary coil of the insulating transformer, the first secondary coil, the second secondary coil, and the output choke coil are wound around a common core, and the coils are arranged in directions of canceling DC fluxes generated by coil windings, and wherein

a primary circuit is formed on the primary side of the insulating transformer, the primary circuit being configured so that a series circuit of the input choke coil and the first switching device is connected across terminals of the DC voltage source, a series circuit of a first capacitor and the primary coil is connected across terminals of the first switching device, and a series circuit of the second switching device and a second capacitor is connected across the terminals of the switching device, and

a secondary circuit is formed on the secondary side of the insulating transformer, the secondary circuit including a first rectifying device connected to the first secondary coil, a second rectifying device connected to the second secondary coil, the output choke coil fed with current having been rectified by the first and second rectifying devices, and an output smoothing capacitor connected to the output choke coil.

6. An insulating switching DC/DC converter, in which a DC voltage source is connected to a primary side of an insulating transformer, voltage is transformed by alternately turning on/off a first switching device and a second switching device so as not to simultaneously turn on the switching devices, the first and second switching devices being connected to the primary side, and an output of DC voltage is obtained via a secondary rectifier circuit of the insulating transformer, comprising:

an input choke coil,

an output choke coil, and

the insulating transformer, wherein

the insulating transformer is a combined transformer having a first secondary coil and a second secondary coil on a secondary side, the input choke coil, a primary coil of the insulating transformer, the first secondary coil, the second secondary coil, and the output choke coil are wound around a common core, and the coils are arranged in directions of canceling DC fluxes generated by windings of the coils, and wherein

a primary circuit is formed on the primary side of the insulating transformer, the primary circuit being configured so that a series circuit of the input choke coil and the first switching device is connected across terminals of the DC voltage source, a series circuit of a first capacitor and the primary coil is connected across terminals of the first switching device, and a series circuit of the second switching device and a second capacitor is connected in parallel with the input choke coil between a positive terminal of the DC voltage source and a negative source of the input choke coil, and

a secondary circuit is formed on the secondary side of the insulating transformer, the secondary circuit including a first rectifying device connected to the first secondary coil, a second rectifying device connected to a second secondary coil, the output choke coil fed with current having been rectified by the first and second rectifying devices, and an output smoothing capacitor connected to the output choke coil.

7. The insulating switching DC/DC converter according to claim 1, wherein The input choke coil and the primary coil of the insulating transformer both have a number of turns of 2N (N is a natural number), and the first secondary coil and the second secondary coil of the insulating transformer and the output choke coil each have a number of turns of n (n is a natural number).